White Mule Emergency Fire Rehabilitation Plan (N051)
Environmental Assessment
EA No. OR-030-00-014

I. PURPOSE AND NEED

A. Background

A lightning storm ignited the White Mule Fire (N051) in the vicinity of Waterhole Butte on August 3, 2000 (map 1). The fire burned 18,158 public land acres in the Dry Creek Native Pasture (65,249 acres) of the Jackies Butte Allotment (#1101 @ 240,244 acres), Jordan Resource Area, Vale District.

Frequent wildfire and historic grazing has eliminated shrub and native grass species from a large block of public land that historically has been wild horse range, critical big game winter habitat and sage grouse habitat. Most of the burned area is in an early seral stage dominated by annual species (cheatgrass, pepperweed, tumble mustard and Russian thistle). Sagebrush and native grass have been replaced by cheatgrass resulting in a short fire-return interval (3.4 years for large fires). Small acreage fires have periodically burned this area (i.e., North Caviatta Fire 1999 - 550 acres) with large fires occurring in 1983 (53,518 ac.), 1985 (32,497 ac.), 1986 (8,500 ac.), 1995 (36,046 ac.) and, lastly, 2000 (18,158 ac.).

The White Mule fire rate of spread was high resulting from erratic winds, low relative humidity and dry fine fuel conditions. Because of a relatively low fireline intensity on the north flank, much of the cheatgrass seed duff layer remains in-tact. However, the southern flank burned hotter thus resulting in much of the cheatgrass duff layer being removed. Within the fire perimeter (25,940 acres), about 30% of the vegetation remains in unburned islands. Fire suppression activities were extensive consisting of 3 dozers, 1 grader, 3 tenders, several type 4 engines, numerous type 6 engines, and resource/support vehicles.

B. Purpose and Need

The purpose of the rehabilitation effort is to establish adapted perennials in order to: stabilize soils with adapted perennials, prevent re-invasion of cheatgrass, reduce fire frequency, establish a perennial forage base for wild horses, wildlife and livestock, and re-establish a shrub cover for multiple rooting depth and wildlife habitat. The boundary fence needs to be restored for protection and the road damage must be repaired for public access and decreased soil erosion.

The rehabilitation effort would be protected by closing the pasture to livestock grazing for a minimum of two growing seasons and conducting an emergency wild horse gather to balance population numbers with available forage and water. It is standard practice to close burned areas and particularly seedings to livestock grazing to facilitate recovery. Wild horses present a unique challenge in terms of dealing with the recovery process of these areas. Temporarily reducing the herd size to balance with existing forage and water would provide adequate protection for plant establishment and retain a viable herd.

II. CONSISTENCY WITH LAND USE PLANS

The proposed rehabilitation effort is consistent with the preferred Land Use Alternative for the Southern Malheur Management Framework Plan (MFP) (1983) and the Southern Malheur Rangeland Program Summary (RPS) (1984).

The horse gather action is governed by the Wild Horse and Burro Act of 1971 (Public Law (PL) 92-195 as amended) and Title 43 Code of Federal Regulations (CFR) part 4700. Gathering and disposal of the wild horses would be in accordance with PL 92-195 as amended by PL 94-579 (Federal Land Policy and Management Act (FLPMA)) and PL 95-514 (Public Rangelands Improvement Act (PRIA)). Section 302(b) of 4700 CFR of FLMPA states that all public lands are to be managed so as to prevent unnecessary or undue degradation of the lands. The proposed action is in compliance with: 1) 43 CFR 4720.1 - "Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately."; 2) 43 CFR 4180.2(b) - "Standards and guidelines must provide for conformance with the fundamentals of 43 CFR 4180.1." The Standards and Guidelines for Grazing Management for public lands have been reviewed by the Departmental Review Team who found that they comply with the requirements of the regulations. Gathering excess horses conforms to the standards and guides which were developed with full public participation and in consultation with Oregon/Washington's resource advisory councils and are in conformance with appropriate land use plans. Attainment of a thriving natural ecological balance which prevents excess utilization of vegetative resources would meet the objectives established in the Southern Malheur MFP and the Southern Malheur RPS, both of which constitute the land use plan for Jordan Resource Area. In addition, the gathering of horses in excess of the appropriate management level (AML) is consistent with the Jackies Butte HMA Plan and the Wild Horse HMA Monitoring Plan for the Vale District. All monitoring is coordinated with the range management program and the wild horse programs to identify areas of conflict between wild horses, wildlife, and domestic livestock. This effort is used to identify areas where resource damage is taking place due to excess wild horses, including but not limited to riparian areas, and helps to set priorities for determining where removal is needed to achieve or maintain a thriving ecological balance in accordance with the above statutes, plans, and regulations. The current selective removal policy is a feature of the Strategic Plan for Management of Wild Horses on Public Lands. The selective removal policy would be modified as allowed by IM 99-053 which also states "when animals must be removed in response to emergency environmental conditions, the selective removal criteria may be amended with written prior approval of the WO-260. The state where the emergency situation exists will immediately contact the WO-260 to jointly develop criteria or removal of the animals, resolve the emergency, and address final disposition of the animals."

It has been determined to modify the selective removal policy and leave a diverse age structure of the returned horses to the HMA with the greatest number primarily being in the 6-9 year age group. There would be some animals in the 5 year and under age group returned as well. This would result in a viable and vigorous herd to ensure future fecundity and recruitment.

III. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

Objectives for the White Mule Fire Rehabilitation Plan are as follows:

1. Stabilize soils and reduce future fire hazards in cheatgrass dominated areas by reducing the re-establishment of annual grasses and weeds, through seeding adapted non-native species. Protect the rehabilitation effort by excluding livestock grazing in the Dry Creek Pasture for at least two growing seasons (i.e., first full year and until seed ripe the second year).

2. Reduce soil erosion, restore perennial cover, restore vegetative structure for wildlife, increase effective precipitation by capturing and holding snow during the winter months by establishing a deep rooted shrub component in the plant community.

3. Preclude cheatgrass invasion by augmenting the native plant community (Wyoming big sagebrush, bluebunch wheatgrass, bottlebrush squirreltail) via seeding native perennial species.

4. Protect the seedings and burned area by reducing the Wild Horse population numbers from 219 to between 50 and 75 animals to insure the health and vigor of the remaining horses in the HMA.

5. Reduce future burned acreage by establishing a 200 foot green strip along the northern perimeter and the two-track road bisecting the burned area. The green strip would buffer weed invasion and most importantly, buffer future wildland fire spread.

6. Restore the boundary fence for protection of the seedings and burned area.

7. Repair the road damage for public access and decreased soil erosion.

The proposed action would be to seed approximately 8,151 total acres (5,673 non-native mix, 2,478 native mix) using rangeland drills. Two seed mixes would be used in the rangeland drills, a non-native plant mix and a native plant mix. A native/non-native worksheet assessing the seed mixes is attached as Appendix 1. Additionally, 3,618 acres laying predominantly in drainage bottoms would be aerially seeded with Wyoming big sagebrush at a rate of one pound per acre (8-10% PLS) with 3 pounds of nitrogen fertilizer or filler. Areas with native perennials would receive priority for sagebrush seeding. Forage kochia would be aerially seeded at a rate of 0.7 lbs. per acre in a 200 foot wide green strip along the northern flank and a two-track road. The green strip would include a total of 425 acres. The proposed seed mixes are listed below:

Species*	Pounds per acre	Total Pounds	Approx. Cost per pound	Total Cost
Non-native Mix: 5,673 acres (drill)				
Crested wheatgrass (Siberian/Fairway)	6	34,038	$ 1.50	$ 51,057.00
Russian wildrye	1	5,673	$ 3.00	$ 17,019.00
Apar, Lewis Flax	0.5	2,837	$ 8.50	$ 24,115.00
White Yarrow	0.5	2,837	$ 9.00	$ 25,533.00
Native Mix: 2,478 acres (drill)				
Secar, Snake River bluebunch	4	9,912	$ 8.30	$ 82,270.00
Goldar/Whitmar, bluebunch wheatgrass	3	7,434	$ 8.05	$ 59,844.00
Magnar, Basin wildrye	1	2,478	$ 8.00	$ 19,824.00
Apar, Lewis Flax	0.5	1,239	$ 8.50	$ 10,532.00
Greenstrip Mix: 425 acres (aerial)				
Forage Kochia	0.7	298	$ 8.00	$ 2,384.00
Fertilizer or inert material	3	894	$ 0.50	
(Greenstrip drilled with Non-native mix)				
Wyoming Big Sagebrush	1	3,618	$ 5.00	$ 18,090.00
Fertilizer or inert material	3	10,854	$ 0.50	$ 5,427.00
TOTAL				**$ 316,542.00**

* Species type and mixture is subject to seed availability.

The non-native mix would be used in the flatter, early seral stage areas that are dominated by annual species with little or no native perennials remaining. The native mix would be used in moderate slope areas, in middle seral stage that retain a remnant component of native perennial species. The sagebrush would be seeded in predominantly drainage bottoms. Areas with native perennials would receive priority for sagebrush seeding. The green strip would be located along the northern flank of the present fire and would bisect the fire along a two-track road.

Livestock grazing would be excluded from the Dry Creek native pasture for at least two growing seasons. Lastly, an emergency gather of the Jackies Butte Wild Horse herd would occur to reduce population numbers from 200 to between 50 and 75 animals, which would a) maintain a viable population, b) balance forage and water availability to population numbers, and c) protect rehabilitation efforts and burned areas. The wild horse gather would adhere to the standard operating procedures as outlined in Attachment 3. The most vigorous middle-aged horses would be returned to the HMA. The old and infirmed would be placed in long-term holding facilities. The 5 year old and younger horses would be placed in the adoption program.

Fertility treatment of the mares was considered and decided against because of the potential of adverse affects due to poor physical condition of the animals.

Monitoring of the burn area would be conducted. This would include monitoring utilization by wild horses, weed monitoring and vegetation monitoring.

B. Alternative 1

No Action

No emergency rehabilitation with protection would be done and no emergency horse gather would occur.

C. Alternative 2

Rehabilitation Effort and Wild Horse Gather with Protection of Only The Burned Area.

Rehabilitation efforts would consist of seeding and the emergency wild horse gather as described in Alternative 1 - Proposed Action. However, only the burned area would be protected by a temporary electric fence. The remaining unburned forage in the Dry Creek Pasture would be grazed by livestock.

IV. AFFECTED ENVIRONMENT

A. Vegetation

Historically, the entire area supported a Wyoming big sagebrush overstory with a bluebunch wheatgrass/ Sandberg's bluegrass and bottlebrush squirreltail understory. Frequent fire occurrence (3.4 years) and historic grazing practices have resulted in the removal of Wyoming big sagebrush, and perennial grass species such as bluebunch wheatgrass in most of the burned area. This has resulted in the invasion of and site domination by cheatgrass, pepperweed and tumble mustard .

The burned area consisted predominantly of cheatgrass, pepperweed, tumble mustard and Russian thistle (about 5,600 acres). Little bluebunch wheatgrass and Sandberg's bluegrass was found in the bottom of several small drainages and along the southern flank. The burned area, which is delineated for non-native seeding, was in an early-seral condition prior to burning. Therefore, an adequate seed source of native perennials does not exist on this site for natural recovery. Post-fire, much of the duff layer within the area, that would be seeded with the non-native mix, consists predominantly of annual grass and remains in-tact, so interspecific competition will be high. However, the seed for the native and non-native mixes would be coated with a bio-nutrient based liquid which significantly increases the rate and percentage of seeds making it through ecesis (the process of germination, early growth, and establishment of plants). The area designated for native seeding has many of the native plant components in-tact thus, with augmentation, can recover. Lastly, some areas along the southeastern flank have adequate pre-burn plant material and seed sources to naturally recover with no augmentation.

Rehabilitation efforts of the Indian Fort Fire (N216) in 1996 resulted in drilling predominantly adapted non-native species with several test plots of native species within 1 to 2 miles north of White Mule Fire. Results after four years indicate that the adapted non-native seeding responded well in cheatgrass conditions while the native species seeded in

cheatgrass areas responded poorly. The Indian Fort fire had very similar Ecological Sites and burning conditions to those found in the White Mule burn area. The North Caviatta fire seeding of a non-native mix has not had enough time since drilling to determine its success, but germination and early growth lends support that it may be successful.

B. Noxious Weeds

Scotch thistle (Onopordum acanthium), an aggressive biennial exists on about 300 acres approximately 1/4 mile north of Caviatta Ridge. The population has about 2,500 individual plants and was chemically treated during the spring of 2000.

C. Livestock Grazing

The burn area is within the Dry Creek Native Pasture of the Jackies Butte Summer Allotment (Community Allotment) and is used in a deferred-rotation grazing system. The allotment has eight permittees. The Dry Creek Native Pasture is presently being grazed with about 3,500 AUMs (24% of the total permitted use) with a stocking rate at 18.6 acres per AUM.

Total permitted use AUMs for the allotment are listed below:

Permittee	AUMs
M.A. Easterday	1,488
K. Easterday	1,557
R. Dowell	3,028
J. Matteri	3,603
R. Holmes	1,557
R. Eason	711
R/B Eason	588
Grenke Ranches	540
V. Pendola	1100
TOTAL	**14,172**

D. Soils

Soils within the burned area consist of silty-loams, shallow to moderately deep, stoney (Unit 75) or very stoney (Unit S75) and are well drained over basalt, rhyolite or welded tuff. Typically, these soils occur in gently undulating to rolling lava plateaus and on some of the steeper faulted and dissected terrain (3-60% slopes). The effect rooting depth on these soils is shallow to moderately deep (15-40 inches) and is limited primarily by parent material.

The White Mule fire suppression activity (N051) caused severe damage to the road-transport system. During the suppression efforts, existing roads were graded to be utilized as control lines. These road/lines are the access and travel routes for suppression activities and general travel. With low soil moisture content and high traffic by truck tractor/lowboys, water tenders, heavy/light engines, and resource vehicles, the roads have been damaged extensively. This damage will be increased-impacted by the rehabilitation of the burned

area. This impact will likely be even greater than the damage incurred during suppression due to heavy traffic over a longer period of time.

With low soil moisture content on silty-loam roads, it is not practical to repair directly after control/containment due to the high volume of water necessary to bind the road material together as a road base.

E. Watershed

No perennial water sources lie within the proposed treatment area. The nearest perennial water is at Hardin Spring, approximately 15 miles north of the project area. Dry Creek, a relatively large intermittent drainage that bisects the burned area and drains into Blevins and Rockhouse Reservoirs, 15 miles north of the fire. Dry Creek is currently without water and has been so for over 6 months.

The burned area lies within the 8-10 inch precipitation zone yet could receive wide variations from drought to wet years ranging from as low as 3 to as high as 12 inches.

F. Wildlife

The burned area is within winter range for mule deer and year-long range for pronghorn antelope. Also, the project area is in historical sage grouse habitat. Other species which inhabit the area include coyote, badger, ground squirrel, chipmunk, whiptail lizard, sagebrush lizard, gopher snake, and western rattlesnake. Common avian species in the area include horned larks, meadow larks, ravens, red-tailed hawks, rock wrens, and burrowing owls.

There are no Threatened or Endangered wildlife species in the proposed treatment area so there will be no requirement to consult with the U.S. Fish and Wildlife Service regarding Section 7 of The Endangered Species Act.

G. Recreation and Visual Resources

Dispersed outdoor recreation in the proposed fire rehabilitation area consists primarily of hunting of upland birds and big game animals. Some dispersed general sightseeing and day hiking may occur. The burn is within a visual resource management class IV area, with low visual sensitivity and a low (class C) scenic quality rating.

H. Cultural Resources

Few cultural resource inventories have been conducted in or near the White Mule Fire. No cultural resources have been recorded within the burned area. The paucity of resources such as water, tool stone and shelter within the area suggests that there is little potential for cultural resources. Areas within the burn that may have some potential for cultural resources include Caviatta Ridge and the Long Water Holes along Dry Creek.

I. Threatened and Endangered (T&E) Plant Species

No known or suspected threatened and endangered or special status plant species are known to occupy the burned area.

J. Wild Horses and Horse Management Area

The burned area lies within the Jackies Butte herd Management Area (HMA). The Jackies Butte Wild Horse Herd Management Area (HMA) is located directly south of Rome, Oregon.

As of August 15, 2000, 219 wild horses, including 47 foals, were in the HMA on a year-long basis. Monitoring shows that the White Mule fire burned the preferred horse habitat within the HMA. Monitoring shows that the horses are concentrated on one of only two water sources (Hardin Springs). Current utilization levels on key forage species around Hardin Springs are reaching heavy (60-80%). Grazing distribution patterns are poor due to a lack of forage and water. The lack of forage availability is resulting in the deterioration in the horses physical condition. Livestock were removed from the Dry Creek Native Pasture in mid-June of the current grazing season.

Monitoring depicts physical condition as a 5 (moderate flesh condition) according to the Henneke Scale.

In most herds that have not been selectively gathered for some time, the approximate age structure may be broken down as follows:

Age Class 0-5: 60-70 percent of herd
Age Class 6-20+: 30-40 percent of herd

Selective removal has typically increased the ratio of male wild horses to female wild horses. Prior to selective removal, most herds seem to have a 53:47 ratio favoring females. Where all horses 5 years and younger are removed, the sex ratio may be adjusted to around 50/50. Previous selective removal criteria used in earlier gathering efforts called for the release of all horses over the age of nine. Under this criteria, the sex ratio was skewed more toward males than it is under current policy. This effect is mitigated by several factors: (1) Increased males in the population increases the likelihood that fertile mares will be bred and can result in smaller band size. This not only results in increased reproduction rates but also decreases the potential for inbreeding. (2) Research has shown that older mares are more fecund and successful at raising their foals than younger mares. (3) Large herd size (AML) dilutes these effects.

K. Other Mandatory Elements

The following mandatory elements are either not present or would not be affected by the proposed action or alternatives:

1. Air Quality
2. Wild and Scenic Rivers
3. Native American Religious Concerns
4. Hazardous wastes
5. Prime or unique farmlands
6. Wilderness Study Areas
7. Areas of Critical Environmental Concern
8. Wetlands/Riparian, Flood Plains

V. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action

1. Vegetation

Seeding would provide an opportunity to establish a more stable perennial vegetal cover consisting of both adapted non-native and native seed mixes, including Wyoming big sagebrush. Site specifically adapted perennial grasses (predominantly Siberian and Fairway varieties) would replace annuals, stabilize watersheds, reduce the potential for noxious weed invasion and create habitat diversity. Most importantly, the non-native mix, coupled with forage kochia would replace more flammable annuals and provide a potential fire control line (i.e., green strip) which would break up the large expansive, thereby potentially reducing the spread of wildfire and size of future burns.

Establishment of sagebrush would provide vegetative diversity and structure to the community that has been lost to the cumulative effect of frequent wildfire and historical grazing practices. Additionally, sagebrush would establish a deep-rooted shrub component in the vegetal community and increase effective precipitation by capturing/holding snow during the winter months.

Moreover, establishing an adapted perennial vegetal community, including non-native grasses would mimic the structure of the native bunchgrass community and restore ecological stability and resiliency thereby rehabilitating rangeland processes.

Immigrant forage kochia (Kochia prostrata)is native to the arid and semi-arid regions of Central Eurasia and was introduced into this country in 1966 with the first plantings occurring in 1968 (Harrison, et. al., 2000). Immigrant is a long-lived, semi-evergreen half shrub that averages 1/3 to 1 m high at maturity. It develops an extensive fibrous root system with a tap root that may extend to a depth of 5 m. In

most environments the lower 1/3 of the plants remain green throughout the year while seed stalk and the upper stems turn brown to red and dry up after seed shatters (late October and November).

Immigrant forage kochia has high ecological plasticity and is adapted to a variety of environmental conditions in this Region (Harrison et. al., 2000). Forage kochia has been used to improve the nutrient quality of range seedings and may improve valuable sources of protein and carotene for grazing animals in seasons when grasses are dry and dormant. Forage kochia tends to dampen the spread of wildfires but will burn when surrounded by sufficient fuel, such as cheatgrass. However, forage kochia sprouts after burning.

Harrison et. al. (2000) concluded that the concerns that forage kochia is an alien species and may spread vigorously throughout western rangelands is largely unfounded. This conclusion was also verified by Julie Kaltenecker and Steve Jirik (Boise BLM, personal communication) who have seeded forage kochia in green strips over the past decade. Lastly, David Ganskopp (Squaw Butte Experimental Station, personal communication) stated that in their test plots, he had not seen forage kochia invade into the surrounding perennial grass communities. He stated that he had inadvertently found 2,4-D (chemical herbicide) was very effective in killing forage kochia.

Ann DeBolt (Boise BLM, personal communication) stated that forage kochia has been used in this country for only about 20 years. Her concern is that twenty years may not be a long enough period to evaluate the long-term competitive ability of this introduced species. Based on the site description and proposed use in this EFR, she stated that the proposed action is consistent with the recommendations developed during the Sagebrush Steppe Symposium held in Boise during 1999 and that she would not have much of a concern. Ann stated, in general, the recommendations from the Symposium were to use forage kochia in limited cases such as green strips or along road sides for purposes of fuel management. Because of its potential competitive nature, it was recommended that forage kochia should not be seeded in Salt Desert Shrub communities and in/around Threatened or Endangered plant species. Lastly, it is recommended that the use of forage kochia be restricted around sensitive native communities.

The Vale District Botanist has continuing concerns regarding the use of Immigrant forage kochia in seeding mixes following wildfires. The origin of this species is cause for immediate concern. Many of the noxious weeds in the Intermountain West are from the arid regions of Central Eurasia, including a weedy annual kochia species (Kochia scoparia) currently well established on roadsides and waste places throughout the Intermountain West. Immigrant forage kochia has only been seeded in the United States within the last 32 years. This time frame may be too short to have captured the wide variety of climatic conditions and climatic trends which would favor a perennial species known to have high ecological plasticity and adaptations for a variety of

environmental conditions. Invasions of noxious plants as well as recoveries of natural systems tend to follow a logarithmic curve, with little activity noted early, followed by rapid increases in numbers of the species being tracked. The time frames for study of invasiveness and competitive abilities of Immigrant forage kochia may not have been long enough to have determined if the logarithmic curve for increase applies to this species. It has not been definitively established that this species will not escape and become a noxious weed either locally or on a widespread basis in the Intermountain West. There is increasing awareness that this species should not be seeded in salt desert shrub community types because of its tendency to become established outside the areas seeded. The species may move into these communities naturally as more and more acres across the West are seeded to Immigrant forage kochia, and more information is needed regarding its dispersal mechanisms, as well as its seed viability in the digestive tracts of ungulates and other animals which utilize it.

2. Noxious weeds

Establishment of perennial species would help prevent the spread and takeover of the site by noxious weeds, particularly Scotch thistle. Establishment of a shrub component would occupy the niche (deep rooted shrubs) in the plant community that perennial grasses alone cannot fill. This would help prevent or minimize the invasion of noxious weed species which will readily invade and fill this niche.

3. Livestock Grazing

Livestock would be excluded from the treated area for at least two growing seasons. Permitted use in the community allotment would be reduced by 3,500 AUMs for the 2001 and, possibily, for the 2002 grazing seasons.

Total permitted use AUMs for the allotment during the rehabilitation effort are listed below:

Permittee	**AUMs**
M.A. Easterday	1,121
K. Easterday	1,174
R. Dowell	2,284
J. Matteri	2,710
R. Holmes	1,174
R. Eason	534
R/B Eason	438
Grenke Ranches	405
V. Pendola	832
TOTAL	**10672**

In the long term, positive benefits would accrue to livestock operators due to the establishment of adapted perennial vegetation, since a more stable forage base would be established.

4. Soils

Road repair/re-contouring would reduce potential erosion by re-contouring the road surface and pulling borrow pits. Additionally, repairing the road system maintains adequate access for the recreating public and authorized/permitted user groups.

5. Watershed

Soil erosion could increase in the short term as a result of loss of vegetative cover from the fire although overall erosion hazard is low due to slopes and low annual precipitation. Soil erosion rates would decrease as perennial species establish on the site over a two year period. The annual species which currently inhabit the area provide much less protection of the soil surface than would perennial species. Under this alternative, erosion rates would decrease further than under the no action alternative due to establishment of perennial species. Perennial vegetation would reduce soil erosion by providing improved protection of the soil surface, and by reducing the frequency of wildfire .

6. Wildlife

The proposed action would result in more winter browse and cover for mule deer and pronghorn antelope. The dependability of spring forage would increase for other wildlife species. Establishment of Wyoming big sagebrush would provide habitat for sage grouse and other sagebrush obligate species. More generally, establishment of sagebrush in this area would provide a corridor linking two larger, fragmented populations of sagebrush which lie to the north and south of the burned area.

7. Recreation and Visual Resources

Impacts to dispersed recreation activities would be insignificant. Should rehabilitation activities occur during game hunting seasons, any wildlife close to the activities would be temporarily disturbed.

Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource class IV. Long term visual evidence of drilled seedings would remain evident.

8. Cultural Resources

A cultural resources inventory of Caviatta Ridge and the Long Water Holes along Dry Creek would be conducted prior to surface disturbing activities. Sites will be flagged, recorded and avoided as appropriate. If paleontologic resources are located during the survey, depending on the nature and extent of the fossil locality, the area will either be flagged and avoided during rehabilitation activities or the fossils will be recovered prior to rehabilitation activities.

9. T&E Plant Species

Special Status plant species are not present in the burned area thus would not be affected.

10. Wild Horses

The chase and capture would subject the wild horses to stress. There would be a possibility that some horses would be seriously injured or killed, that foals could become separated from their mothers, and that minor injuries could occur. Behavioral traits and band composition of the herd would be temporarily disrupted. Impacts to the animals would be mitigated by Standard Operating Procedures (see Attachment 3).

B. No Action

1. Vegetation

Annual species would dominate the site thus enhancing the chance of noxious weed invasion. The potential for invasion of noxious weeds would remain high. Potential for repeated wildfire would be high. The cumulative effects of repeated wildfire has caused a loss of vegetative diversity and structure. This trend would continue.

2. Noxious weeds

The site would be susceptible to domination by noxious weeds found adjacent to the site. Scotch thistle is an aggressive and highly invasive species. With little competition from perennial grasses and shrubs, this weed would dominate the burn area and provide ecological conditions conducive for other noxious weeds to invade.

3. Livestock Grazing

Livestock would not be allowed to graze the burn area for two growing seasons as required by BLM policy. No long term benefits would occur as there would be no improvement to forage production or vegetative conditions. Livestock production may be further negatively impacted in the long term if noxious weed species increase in the burn area and fire-return intervals increase.

4. Soils

Soil erosion would increase due to sheet and/or rill erosion derived from an annual plant community. In time, soil chemistry and infiltration rates would be altered in the annual plant dominated range from that depicted by a perennial grass/sagebrush plant community.

5. Watershed

Soil erosion would increase in the short term as a result of loss of vegetative cover. Erosion rates would slightly decrease as the annual species re-establish dominance on the site. Soil erosion rates would remain higher than under the proposed action due to the lack of perennial vegetal cover. Fire frequencies would remain high and short term exposure to erosion would occur with each future fire event.

6. Wildlife

Wildlife habitat and forage quality would not improve. The loss of shrub habitat would negatively affect big game and sagebrush dependant species, such as sage grouse.

7. Recreation and Visual Resources

The return of game species for hunting may be somewhat delayed. Site domination by undesirable weed species would hinder efforts to improve game species habitat in the burn area. There would be an insignificant delay in returning the area to a preferred visual setting of some type of vegetative cover.

8. Cultural Resources

There would be no effect to cultural resources from mechanized equipment as a result of the no action alternative. However, surface disturbance may be greater from livestock trampling and erosional factors without vegetation to provide surface stability.

9. T & E Plant Species

Special Status plant species would not be affected.

10. Wild Horses

Without the emergency gather, the wild horses would encounter lack of forage and available water resulting in loss of acceptable physical condition causing physiological stress. These conditions would be accelerated by the present drought conditions. Additionally, without gathering, the wild horses would severely impact vegetative rehabilitation efforts. This would negatively effect the future thriving natural ecological balance needed to insure the horses' health and well being.

C. Alternative 2

Rehabilitation Effort and Wild Horse Gather with Protection of Only The Burned Area.

Impacts from this action would be identical to those discussed in the Proposed Action Alternative with the exception of livestock.

Under this alternative, approximately 16 miles of temporary electric fence would be constructed to protect the seeded and burned area. The protected area would remove about 50% of the pasture from use resulting in a reduction of approximately 1,750 permitted use AUMs. Consequently total permitted use for the allotment would be 12,422 AUMs.

The temporary fences would bisect the pasture/HMA resulting in inadequate water availability for the remaining forage base for both livestock and wild horses and would cause poor grazing distribution. This would result in improper use of the forage resource and could result in early livestock removal. This pasture, given the rotational grazing system remains constant, would be used from July through October during the 2001 grazing season. Inadequate water sources during hot season grazing potentially increases improper use. The 1995 fire (36,046 ac) rehabilitation effort resulted in construction of a single 10 mile temporary electric fence to protect the burned area/seedings. Wild horses remained in the HMA and with livestock, consistently traversed through the temporary fence rending it ineffective and impacting the rehabilitation effort.

More importantly, high tensile cable was used to improve the effectiveness of the temporary electric fence. The high tensile cable did not break when encountered by animals resulting in wild horses, wildlife and livestock entangling themselves . No known injuries occurred during this rehabilitation effort but could during any future use.

VI CONSULTATION AND COORDINATION

Oregon Department of Fish and Wildlife
Jackies Butte Summer Allotment permittees

VII. MONITORING

A. Noxious Weeds

Intensive monitoring of the burned area for two years would be required to locate and control noxious weeds which are known to have existed in the burned area. Intensive ground surveys would be conducted monthly from May through October.

B. Vegetation

The burned area would be monitored to determine degree and extent of establishment of seeded species. Monitoring will be done in representative areas during the first three years of the project. Monitoring will include photo plots and techniques to determine species occurrence, composition and vigor.

C. Livestock

Periodic use supervision would be conducted in the project area to ensure livestock are excluded from the pasture during establishment and recovery vegetation on the burned area.

D. Wild Horses

The remaining wild horses in the HA would be monitored to track physiological condition. Utilization on key forage plants would be conducted on the rehabilitation area as well as the unburned range in the Jackies Butte HA to ensure proper use criteria is adhered to and adequate forage and water is available.

VIII. SUMMARY

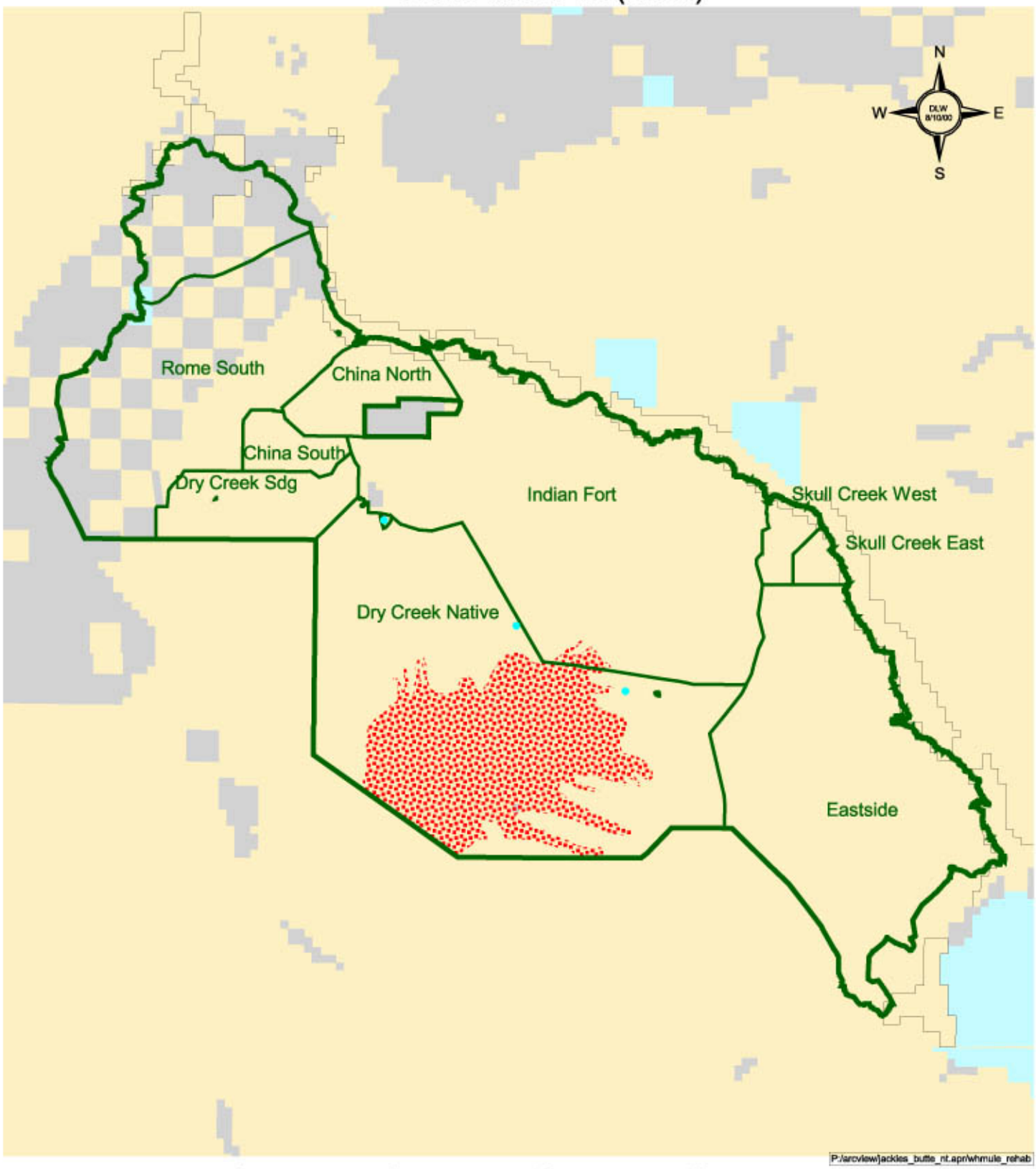
The rehabilitation effort, as proposed, is expected to establish adapted perennials and will: stabilize soils with adapted perennials, prevent re-invasion of cheatgrass, reduce fire frequency, establish a perennial forage base for wild horses, wildlife and livestock, and re-establish a shrub cover for multiple rooting depth and wildlife habitat. The boundary fence will be restored for protection and the road damage must be repaired for public access and decreased soil erosion.

The rehabilitation effort will protected by closing the pasture to livestock grazing for a minimum of two growing seasons and conducting an emergency wild horse gather to reduce population numbers. This herd will then be monitored during the burn recovery process.

IX. REFERENCES

Harrison, R.D., N.J. Chatteron, B.L. Waldron, B.W. Davenport, A.J. Palazzo, W.H. Horton, K.H. Asay. 2000. Immigrant Forage Kochia - It's Compatibility and Potential Aggressiveness on Intermountain Rangelands. Research Report 162, U.S. Depart. of Ag, Forest Service, Intermountain Research Stat, Ogden Utah.

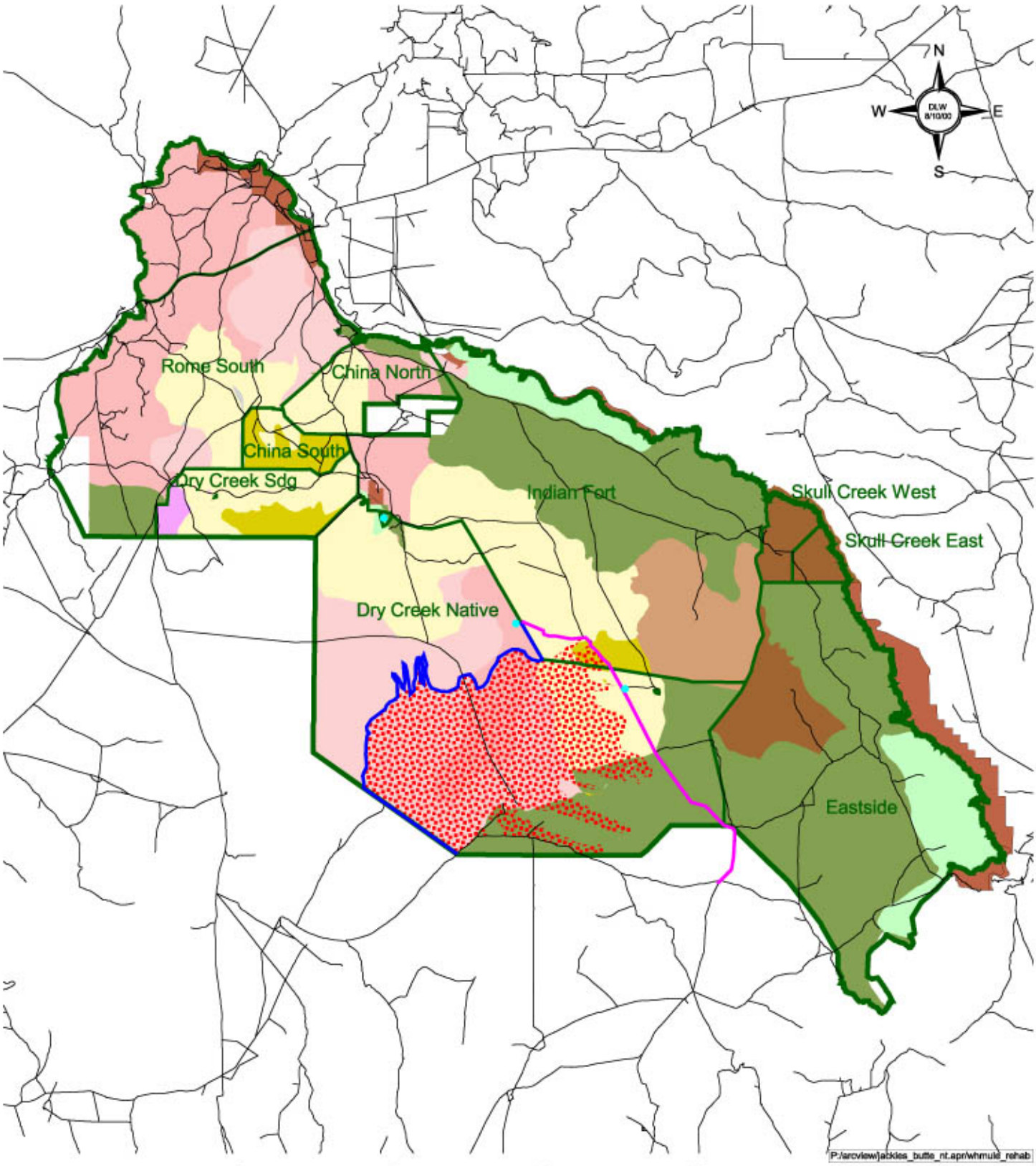
White Mule Fire (N051)



Map 1

- White Mule Fire (N051)
- Jackies Butte Summer allotment
- Pastures Boundaries
- Public Land
- Private Land
- State Land

White Mule Fire (N051)



Map 2

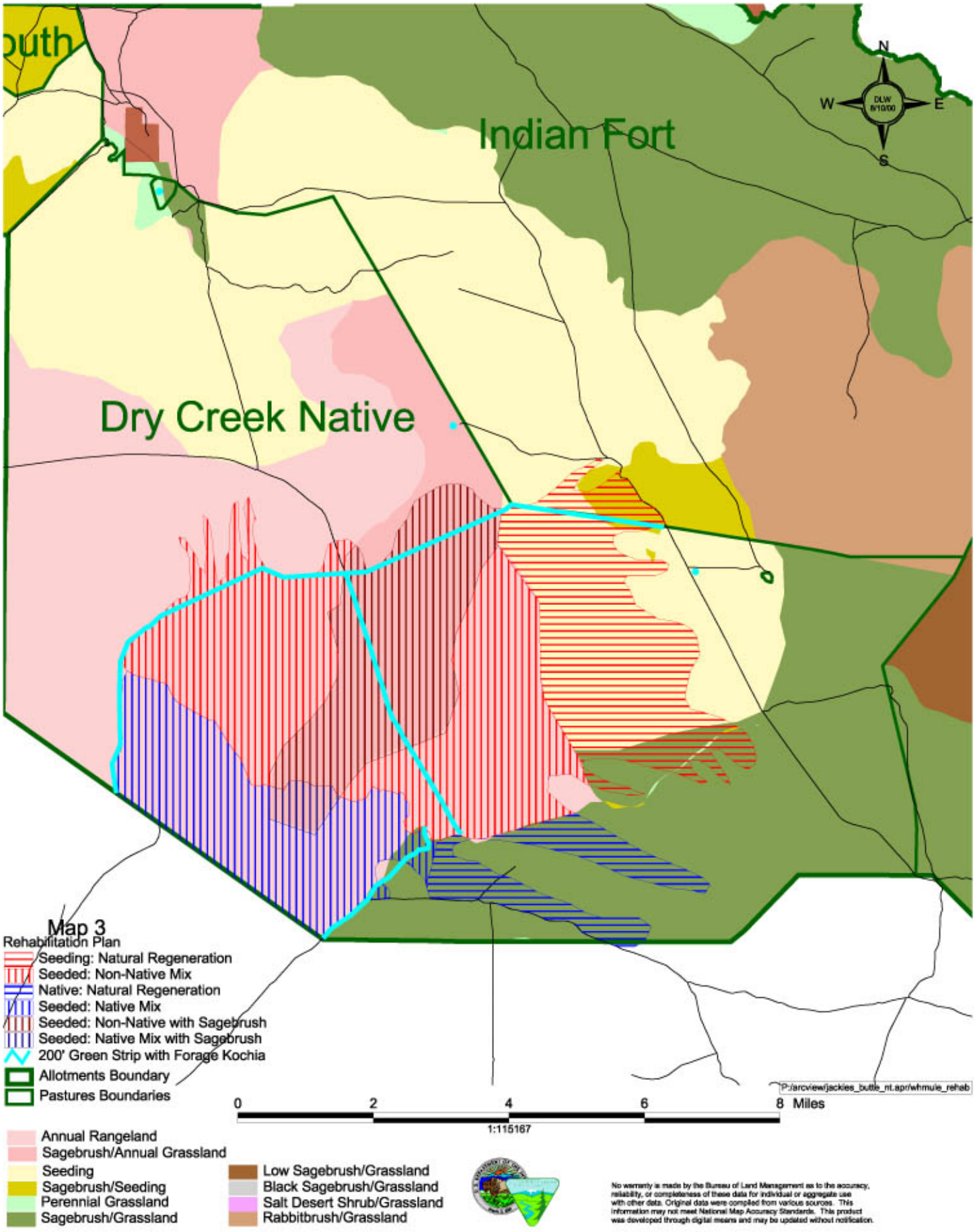
0 5 10 15 20 Miles

1:271985

- Road/Control Line
- Dozer Lines
- Roads
- Allotments Boundary
- Pastures Boundary
- White Mule Fire

- Sagebrush/Annual Grassland
- Annual Grassland
- Seeding
- Sagebrush/Seeding
- Perennial Grassland
- Sagebrush/Grassland
- Low Sagebrush/Grassland
- Black Sagebrush/Grassland
- Rabbitbrush/Grassland
- Salt Desert Shrub/Grassland

White Mule Fire (N051)



X. ANNUAL WORK PLAN SECTION

A cost/risk assessment is attached as Appendix 2. Listed below by fiscal year is a summary of funding needs for the proposed action:

Description	Items	Cost by Activity		
		2821	2822	8100
FY2000				
Plan, EA preparation, surveys	1 WM		$4,000.00	
Seed purchase			$316,542.00	
Horse Gather	Capture (190 head @ $333/hd)		$63,270.00	
	Transport (150 head @ $2.00/hd)		$300.00	
	Feed costs (150 feed days @ $6.00/day)		$900.00	
FY2001				
Plan, EA preparation, surveys	1 WM		$4,000.00	
Road repair	labor		$6,000.00	
Permanent fence repair	labor		$1,080.00	
	material		$980.00	
Rangeland drilling	equipment		$151,247.00	
	labor		$116,488.00	
Broadcast seeding	end product contract		$26,000.00	
Rehab monitoring	1 WM		$4,000.00	
Noxious weed monitoring	1 WM		$3,000.00	
Noxious weed treatment	materials		$250.00	
FY2002				
Rehab monitoring	1 WM		$4,000.00	
Noxious weed monitoring	1 WM		$3,000.00	
Noxious weed treatment	materials		$250.00	
TOTAL		$0.00	$705,307.00	$0.00

XI. EFR PROJECT SUMMARY

Fire Name:	White Mule Fire
Fire Number:	N051
Fire Control Date:	08/04
Acres BLM Burned:	18,158
Start of Rehabilitation Project (Mo/Yr):	09/00
Completion of Rehabilitation Project (Mo/Yr):	09/2002
Miles of Temporary Fence:	none
Miles of Fence Rebuilt:	4
No. of Soil/Watershed Structures:	none
Acres Reforestation:	none
Acres of Revegetation[1]:	8,151
Acres of Burned Area Protected for Natural Regeneration[2]:	10,007
Total Acres Rehabilitated[3]:	18,158
Estimated Funding Current Year (FY2000):	385,012
Estimated Funding Second Year (FY2001):	313,045
Estimated Funding Third Year (FY2002):	7,250
Total Cost Rehabilitation Project:	705,307

XII. LIST OF PREPARERS/REVIEWERS

Tom Miles, Supervisory Range Management Specialist
David Wallace, Range Management Specialist
Tom Christensen, Outdoor Recreation Planner
Jean Findley, Botanist
Jerry Taylor, Jordan Field Office Manager
Marnie Wilson, Archaeologist
Jack Wenderoth, Hydrologist
Jon Sadowski, Wildlife Biologist
Jerry Erstrom, Weed Coordinator
Dave Evans, Force Account Work Leader
Barb Masinton, Fire Ecologist
Jim Johnson, Wild Horse Specialist

XIII. ENVIRONMENTAL ASSESSMENT DECISION REPORT

Finding of No Significant Impact / Decision Record

On the basis of the information contained in this Environmental Assessment and all other information available, it is my determination that the proposed action is in conformance with the land use plan for the area and does not constitute a major federal action significantly affecting the quality of the human environment and that an EIS is not required. It is my decision to implement the proposed action described in this EA (OR-030-00-014).

s/Jerry L. Taylor	August 24, 2000
Authorized Official	Date

Appendix 1
Non-native Plant Worksheet

Proposed Non-native Plants in Seed Mixture

1. Is the use of non-native plants necessary to meet objectives, e.g., consistent with applicable land use/activity plans ?
Yes [X] No [ ] Rationale: The area identified for the non-native seed mix is dominated with cheatgrass. The cheatgrass seed dominated duff layer remains in-tact. Non-native perennials would have a significantly improved chance of successful establishment and maintenance in these areas relative to native species because of interspecific competition during ecesis and their adaptability to shallow, gravelly, alkaline soils in the 8-10 inches precipitation zone.

2. Will non-native plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?
Yes [X] No [ ] Rationale: The proposed seed mix would significantly improve vegetative diversity and ecological processes by establishing perennial vegetation in areas dominated by annual invasive and potential noxious species.

3. Will non-native plants stay on the site they are seeded and not significantly displace or interbreed with native plants?
Yes [X] No [ ] Rationale: The proposed mix of non-native plants are species that have not been shown to significantly displace or interbreed with native plants.

Appendix 2
Modified Cost - Risk Analysis

Treatment	Cost
Revegetation	$ 588,332
Road Repair	$ 6,000
Soil/Watershed/fences Structures	$ 2,060
Emergency Horse Removal	$ 64,470
All Other Costs (administrative, clearances, etc.)	$ 22,500
TOTAL	**$ 683,362**

Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatments	Units	NA	%
Revegetation (overall rating)	8,151		100
Drill Seeding (acres)	8,151		100
Aerial Seeding (acres)	4,043		100
Other	0		
Protective Fence to Exclude Grazing (miles)	0		
Fence Repair to Exclude Grazing (miles)	4		
Soil/Watershed Structures (overall rating)	0		
Retention dams/structures (number)	0		
Ripping, contour furrows, etc.	0		
Matting, watersheds cover, etc.	0		
Other-Road Repair (miles)	20		

Risk of Resource Value Loss or Damage

Identify the risk (high, medium, low, none or not applicable (NA)) of unacceptable impacts or loss of resources.

Resource Value	NA	None	Low	Mid	High
No Action- Treatments Not Implemented (check one)					
Unacceptable Loss of Topsoil					X
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity					X
Unacceptable Loss of Vegetation Structure					X
Unacceptable Disruption of Ecological Processes					X
Off-site Sediment Damage to Private Property		X			
Off-site Threats to Human Life		X			
Other - Loss of access road due to plugged culverts		X			
Proposed Action - Treatments Successfully Implemented (check one)					
Unacceptable Loss of Topsoil			X		
Weed Invasion			X		
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property		X			
Off-site Threats to Human Life		X			
Other - Loss of access road		X			

SUMMARY

The costs of the project and probability of success of the proposed treatments are compared with the risks to resource values if: 1) no action is taken, and 2) the proposed action is successfully implemented. Alternatives may be included in this analysis to assist in the selection of the treatments that will cost effectively achieve the EFR objectives. Answer the following questions to determine which proposed EFR treatments should be selected and implemented.

1. Are the risks to natural resources and private property acceptable as a result of the fire if the following actions are taken?

Proposed Action Yes [X] No [ ] Rationale for answer: The threat of weed invasion will be greatly reduced with a successful seeding. Erosion will be reduced. The threat of repeated wildfire will be reduced with a more diverse perennial vegetation and its spread will be limited by the greenstrip as well as will meet wildlife needs and rangeland health standards. Seeding and fencing costs are satisfactory considering seed mixtures and demand.

No Action Yes [ ] No [X] Rationale for answer: The threat of weed invasion, erosion and repeated wildfire will be increased without treatment. Wildlife habitat and Rangeland health standards will not be met.

2. Is the probability of success of the proposed action and no action acceptable given their costs?

Proposed Action Yes [X] No [ ] Rationale for answer: Recent seedings on adjacent areas on similar soils have been successful under normal climatic conditions and protection from grazing for 2-3 growing seasons. More over, Non-native seed is about one-half the cost of Native seed while Non-native seeding would have about 5-6 times the success at establishment, given recent site-specific seeding trials, pre-burn vegetative conditions, and North Caviatta burn conditions.

No Action Yes [ ] No [X] Rationale for answer: Adjacent areas with similar soils and vegetation that have not been seeded following fire have become annual monocultures that do not meet wildlife and Rangeland Health needs.

3. Which approach will most cost-effectively and successfully attain the EFR objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Proposed Action [X], Alternative(s) [ ], or No Action [ ]

Comments: The proposed action best meets the need for reducing weed invasion and repeated wildfire while providing forage/structure for wildlife as well as enhancing site conditions for meeting standards for Rangeland Health.

ATTACHMENT 3 - STANDARD OPERATING PROCEDURES

A. Methods for Humane Capture Wild Horses Helicopter Removals with or without a Contract

The helicopter drive trapping method employed for this capture operation requires that horses be herded to a trap of portable panels and on extremely rare occasions to ropers who, after roping the animal, will bring it to the trap. Gathering would be conducted by using agency personnel or contractors experienced in the humane capture and handling of wild horses. The same rules apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed during the contract period to ensure the welfare, safety and humane treatment of the wild horses in accordance with the provisions of 43 CFR 4700 and Great Basin Wild Horse and Burro Gathers contract.

1. Capture Methods That May Be Used in the Performance of a Helicopter Gather

a. Helicopter Drive Trapping

This capture method will involve driving horses into a pre-constructed trap using a helicopter. The trap is constructed of portable steel panels consisting of round pipe. Wings are constructed off the ends of the panel trap to aid in funneling horses into the trap. The wings are constructed of natural jute, (or similar netting which will not injure a horse), which is hung on either trees or long steel posts. This sort of wing forms a very effective visual barrier to the horses that they typically will not run through. When the trap is ready for use, a helicopter will start moving one band of horses at a time toward the trap and into the wings.

The contractor/BLM shall attempt to keep bands intact except where animal health and safety become considerations which would prevent such procedures. The contractor/BLM shall ensure that foals shall not be left behind.

At least one saddle-horse should be immediately available at the trap site to perform roping if necessary. Roping shall be done as determined by the Contracting Officer's Representative (COR) or Project Inspector (PI). Under no circumstances shall animals be tied down for more than one hour.

Domestic saddle horses may also be used to assist the helicopter pilot (on the ground) during the gather operation, by having the domestic horse act as a pilot (or "Judas") horse on the ground, leading the wild horses into the trap site. Individual ground hazers and individuals on horseback may also be used to assist in the gather.

b. Helicopter Assisted Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. Under no circumstances shall horses be tied down for more than one hour.

Roping shall be performed in such a manner that bands will remain together. Foals shall not be left behind.

2. Other Non-Helicopter Capture Methods

a. Water Trapping

This method involves setting up a trap around a well used water source and employing a self-closing gate with a triggering device or finger gates. Finger gates can be used only with the prior approval and under the supervision of the COR/PI. It may be necessary to exclude access to other neighboring water sources to encourage use by the target population at the trap site. Water traps equipped with trip wires would be every 10 hours for trapped animals.

All exclosures constructed for the purpose of the gather would be flagged and highly visible to the horses, wildlife, and the public. The wires, twine, and flagging would be promptly removed following completion of the trapping.

All water traps and exclosures would be constructed (whenever possible) to accommodate wildlife access points. These points would be where wildlife could get to water by going underneath the panels, such as along trails, washes or low spots.

Placement of portable corral panels would be permitted during foaling season to allow wild horses to become accustomed to them.

c. Bait Trapping

Bait trapping using hay or other enticements may be used as an additional or alternative method of capture. This method would involve setting up a panel trap in an area accessible to the horses and feeding of enticements in the trap over a period of time to habituate the target animal to the bait. Once virtually all horses in an area were coming in to the bait, they would be trapped. The principal limitation of this method is that forage must be limited or the bait must be more desirable than the surrounding forage.

d. Net Gunning

The net-gunning aerial capture technique uses weighted nets to individually capture wild animals. Net gun capture is a valuable tool when specific animals are targeted for restraint, relocation or removal. The technique is not applicable when a number of animals require capture.

When using nets, drug and electrical immobilization are rarely required. Individual animals are located, herded by the pilot as slowly as possible into an open area and then are netted from the helicopter using weighted, soft mesh net. As the horse becomes tangled in the net they become somewhat disoriented and further slow down. Some animals come to a complete standstill when surrounded by the net. Others become tangled to the point where they roll onto the ground.

Immediately after netting an animal the crew members approach the animal. The horse or burro is rolled onto its side, cross-hobbled and blindfolded. A muzzle is used in cases where an animal acts

aggressive. The net is then rolled away from the horse or burro and the animal can be handled for collection of biological samples. If transport is required, the hobbled, blindfolded animal is rolled into a soft canvas bag. The bag is laced closed with a strong nylon rope. The rope is attached to a hook on the belly of the helicopter and the animal is transported to the destination. Transport time to small, portable corrals is usually under 10 minutes per animal.

Once at the destination, the horse is gently lowered into the small, portable corral. The ground crew unhooks the transport rope and removes the bag from around the animal. The blindfold and hobbles are removed. The horse immediately gets onto their feet, appearing only slightly disoriented.

3. Stipulations for Portable Corral Traps/Exclosures

Capture traps would be constructed in a fashion to minimize the potential for injury to wild horses and BLM personnel. Gates would be wired open at all unmanned trap sites, and would be left closed only when needed to hold horses inside. Trapped horses would not be held inside the traps for a period exceeding 10 hours, unless provided with feed (weed free hay) and water.

The Oregon Department of Fish and Wildlife would be notified as soon as possible if any wildlife became injured during capture operations. Wildlife caught inside traps would be released immediately.

4. Contract Helicopter, Pilot and Communications

The contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.

When refueling, the helicopter shall remain a distance of at least 1,000 feet or more from animals, vehicles (other than fuel truck), and personnel not involved in refueling.

The COR/PI shall have the means to communicate with the contractor's pilot at all times. If communications cannot be established, the Government will take steps as necessary to protect the welfare of the animals. The frequency(ies) used for this contract will be assigned by the COR/PI when the radio is used. The contractor shall obtain the necessary FCC licenses for the radio system.

The proper operation, service and maintenance of all contractor furnished helicopters is the responsibility of the contractor. The BLM reserves the right to remove from service pilots and helicopters which, in the opinion of the Contracting Officer or COR/PI, violate contract and FAA rules, are unsafe or otherwise unsatisfactory. In this event, the contractor will be notified in writing to furnish replacement pilots or helicopters within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.

All incidents/accidents occurring during the performance of any delivery order shall be immediately reported to the COR.

5. Non-Contract Helicopter Operations

An Aircraft Safety Plan and flight hazard analysis will be appropriately approved and filed and copies distributed to the necessary individuals prior to commencing the removal operation. Daily flight plans will also be filed. If a BLM contract helicopter is used, all BLM, Aircraft Safety and Operations standards will be adhered to.

There will be daily briefings with the helicopter pilot, Authorized Officer and all personnel involved in the day's operation. The purpose of this meeting is to discuss in detail all information gathered during the familiarization flight such as hazards, location of horses, potential problems, etc. Discuss any safety hazards anticipated for the coming day's operation or any safety problems observed by the Authorized Officer or anyone else, outline the plan of action, delineate course of actions, specifically position the hazers and their responsibilities, logistics, and timing. After each flight, removal personnel will discuss any problems and suggest solutions. This may be accomplished over the radio or on the ground as the need dictates.

A flight operations plan will be filed with the Vale District Dispatch Center. This plan will describe the area to be flown and the expected time frames of flight operations. A weather forecast will be acquired from the dispatcher. There will be no flights on days of high or gusty, erratic winds or days with poor visibility.

Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

An operation or contractor's log will be maintained for all phases of the operation. The log will be as detailed as possible and will include names, dates, places and other pertinent information, as well as, observations of personnel involved.

6. Animal Handling and Care

Prior to any gathering operations, the COR/PI will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed.

The contractor will be appraised of the all conditions and will be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

The Authorize Officer and pilot may take a familiarization flight identifying all natural hazards (rims, canyons, winds) and man-made hazards in the area so that helicopter flight crew, ground

personnel, and wild horse safety will be maximized. Aerial hazards will be recorded on the project map.

No fence modifications will be made without authorization from the Authorized Officer. The contractor/BLM shall be responsible for restoration of any fence modification which has been made.

If the route the contractor/BLM proposes to herd animals passes through a fence, opening should be large enough to allow free and safe passage. Fence material shall be rolled up and fence posts will be removed or sufficiently marked to ensure safety of the animals. The standing fence on each side of the gap will be well flagged or covered with jute or like material.

Wings shall not be constructed out of materials injurious to animals and must be approved by the Authorized Officer.

It is the responsibility of the contractor/BLM to provide security to prevent loss, injury or death of captured animals until delivery to final destination.

Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

Branded or privately owned animals captured during gather operations will be handled in accordance with state estray laws and existing BLM policy.

Capture methods will be identified prior to issuance of delivery orders. Regardless of which methods are selected, all capture activities shall incorporate the following:

a. Trap Site Selection

The Authorized Officer will make a careful determination of a boundary line to serve as an outer limit within which horses will be herded to a selected trap site. The Authorized Officer will insure that the pilot is fully aware of all natural and man made barriers which might restrict free movement of horses. Topography, distance, and current condition of the horses are factors that will be considered to set limits to minimize stress on horses.

Gather operations will be monitored and restricted (if necessary) to assure the body condition of the horses are compatible with the distances and the terrain over which they must travel. Pregnant mares, mares with small colts, and other horses would be allowed to drop out of bands which are being gathered if required to protect the safety and health of the animals.

All trap and holding facility locations must be approved by the Authorized Officer prior to construction. The situation may require moving of the trap. All traps and holding facilities not located on public land must have prior written approval of the landowner.

Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the Authorized Officer, to relieve stress to the animals caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

b. Trap/Facility Requirements

All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.

All loading chute sides shall be fully covered with plywood (without holes) or like material. The loading chute shall also be a minimum of 6 feet high.

All runways shall be of sufficient length and height to ensure animal and wrangler safety and may be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 6 feet above ground level for horses.

If a government furnished portable chute is used to restrain, age, or to provide additional care for animals, it shall be placed in the runway in a manner as instructed by or in concurrence with the Authorized Officer.

All crowding pens including the gates leading to the runways may, if necessary to prevent injuries from escape attempts, be covered with a material which prevents the animals from seeing out (plywood, burlap, snow fence etc.) and should be covered a minimum of 2 feet to 6 feet above ground level for horses.

When holding facilities are used, and alternate pens are necessary to separate mares or jennies with small foals, animals which will be released, sick and injured animals, and estrays from the other animals or to facilitate sorting as to age, number, size, temperament, sex, and condition. They will be constructed to minimize injury due to fighting and trampling. In some cases, the Government will require that animals be restrained for determining an animal's age or for other purposes. In these instances, a portable restraining chute will be provided by the Government. Either segregation or temporary marking and later segregation will be at the discretion of the COR.

If animals are held in the traps and/or holding facilities, a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day will be supplied. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day.

Separate water troughs shall be provided at each pen where animals are being held. Water troughs shall be constructed of such material (e.g. rubber, rubber over metal) so as to avoid injury to animals.

When dust conditions occur within or adjacent to the trap or holding facility, the contractor/BLM shall be required to wet down the ground with water.

7. Treatment of Injured or Sick; Disposition of Terminal Animals

The contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Destruction of Wild Horses and Burros and Disposal of Remains, and is in accordance with BLM policy as expressed in Instructional Memorandum No. 98-141.

Any captured horses that are found to have the following conditions may be humanely destroyed:

a. The animal shows a hopeless prognosis for life.
b. Suffers from a chronic disease.
c. Requires continuous care for acute pain and suffering.
d. Not capable of maintaining a body condition rating of one or two.
e. The animal is a danger to itself or others.

The Authorized Officer will determine if injured animals must be destroyed and provide for destruction of such animals. The contractor/BLM may be required to dispose of the carcasses as directed by the Authorized Officer.

The carcasses of the animals that die or must be destroyed as a result of any infectious, contagious, or parasitic disease will be disposed of by burial to a depth of at least 3 feet.

The carcasses of the animals that must be destroyed as a result of age, injury, lameness, or noncontagious disease or illness will be disposed of by removing them from the capture site or holding corral and placing them in an inconspicuous location to minimize visual impacts. Carcasses will not be placed in drainages regardless of drainage size or downstream destination.

8. Motorized Equipment

All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of

animals. The contractor shall provide the Authorized Officer with a current safety inspection (less than one year old) of all tractor/stock trailers used to transport animals to final destination.

Vehicles shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

Only stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities. Only stock trailers, or single deck trucks shall be used to haul animals from temporary holding facilities to final destination(s). Sides or stock racks of transporting vehicles shall be a minimum height of 6 feet 6 inches from the vehicle floor. Single deck trucks with trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have at the minimum a 5 foot wide swinging gate. The use of double deck trailers is unacceptable and will not be allowed.

All vehicles used to transport animals to the final destination(s) shall be equipped with at least one (1) door at the rear end of the vehicle, which is capable of sliding either horizontally of vertically. The rear door must be capable of opening the full width of the trailer. All panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of the trailer must be strong enough, so that the animals cannot push their hooves through the sides. Final approval of vehicles to transport animals shall be held by the Authorized Officer.

Floors of vehicles, trailers, and the loading chute shall be covered and maintained with materials sufficient to prevent the animals from slipping.

Animals to be loaded and transported in any vehicle or trailer shall be as directed by the Authorized Officer and may include limitations on numbers according to age, size, sex, temperament, and animal condition. The minimum square footage per animal is as follows:

11 square feet/adult horse (1.4 linear foot in an 8 foot wide trailer)

6 square feet/horse foal (0.75 linear foot in an 8 foot trailer)

The Authorized Officer shall consider the condition of the animals, weather conditions, type of vehicles, distance to be transported, or other factors when planning for the movement of captured animals. The Authorized Officer shall provide for any brand and/or inspection services required for the captured animals.

Communication lines will be established with personnel involved in off-loading the animals to receive feedback on how the animals arrive (condition/injury etc.). Should problems arise, gathering

methods, shipping methods and/or separation of the animals will be changed in an attempt to alleviate the problems.

If the Authorized Officer determines that dust conditions are such that animals could be endangered during transportation, the contractor/BLM will be instructed to adjust speed and/or use alternate routes.

Periodic checks by the Authorized Officer will be made as animals are transported along dirt roads. If speed restrictions are in effect the Authorized Officer will at times follow and/or time trips to ensure compliance.

9. Special Stipulations.

Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up traps on any lands which are not administered by BLM. Wherever possible, traps would be constructed in such a manner as to not block vehicular access on existing roads.

If possible, traps would be constructed so that no riparian vegetation is contained within them. Impacts to riparian vegetation and/or running water is located within a trap (and available to horses) would be mitigated by removing horses from the trap immediately upon capture. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.

Gathering would be conducted when soils are dry or frozen and conditions are optimal for safety and protection of the horses and wranglers. Whenever possible, scheduling of gathering activities to minimize impacts with big game hunting seasons.

Gathers would not be conducted 6 weeks on either side of peak foaling season which for this gather is May1 to August 1 to reduce the chance of injury or stress to pregnant mares or mares with young foals.

The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

Standard operating procedures in the siting and construction of traps will avoid adverse impacts from trap siting, construction, or operation to wildlife species, including threatened, endangered, or sensitive species.

10. Herd Health and Viability Data Collection

The following information will be collected form each animal captured: age, sex, color, overall health, pregnancy or nursing status.

In addition, blood or hair samples may be collected from individuals within the herd depending on available funding to identify the genome of the herd. Certain other activities including immunocontraceptive research radio collaring, and freeze marking may be conducted.

a. Population Management Plan/Selective Addition or Removal

Blood samples may be taken for the purposes of furthering genetic ancestry studies and incorporation into the Population Management Plans which will be developed for each HMA/complex.

On occasion, it may be necessary to enhance and maintain genetic diversity a few animals with compatible characteristics may be introduced from other HMAs. Introduced animals will be taken from areas with similar habitat.

b. Immunocontraceptive Research

When the immunocontraceptive vaccine is used, delivery of the vaccine will be conducted by trained individuals, using approved delivery methods. The vaccine will be administered to the large muscle on the hip.

11. Public Participation

Prior to conducting a gather a communications plan or similar document summarizing the procedures to follow when media or interested public request information or viewing opportunities during the gather should be prepared.

The public must adhere to guidance from the agency representative and viewing must be prearranged.

12. Safety

Safety of BLM employees, contractors, members of the public, and the wild horses will be given primary consideration. The following safety measures will be used by the Authorized Officer and all others involved in the operation as the basis for evaluating safety performance and for safety discussions during the daily briefings:

A briefing between all parties involved in the gather will be conducted each morning.

All BLM personnel, contractors and volunteers will wear protective clothing suitable for work of this nature. BLM will alert observers of the requirement to dress properly. BLM will assure that members of the public are in safe observation areas.

The handling of hazardous, or potentially hazardous materials such as liquid nitrogen and vaccination needles will be accomplished in a safe and conscientious manner by BLM personnel or the contract veterinarian. (Refer to page 28, Hazardous Materials.)

13. Responsibility and Lines of Communication

The Contracting Officer's Representative, Joe Petzold from the Burns District Office, and Project Inspector, Jim Johnson, from Vale District Office, have the direct responsibility to ensure the contractor's compliance with the contract stipulations.

The Assistant Field Manager for Renewable Resources and the Jordan Resource Area Field Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, Oregon State Office, and Burns Corral offices.

All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

14. Glossary

Appropriate Management Level - The number of wild horses and burro which can be sustained within a designated herd management area which achieves and maintains a thriving natural ecological balance keeping with the multiple-use management concept for the area.

Authorized Officer - An employee of the BLM to whom has been delegated the authority to perform the duties described in these Standard Operating Procedures. See BLM Manual 1203 for explanation of delegation of authority.

Census - The primary monitoring technique used to maintain a current inventory of wild horses on given areas of the public lands. Census data are derived through direct visual counts of animals using a helicopter.

Contracting Officer (CO) - Is the individual responsible for an awarded contract who deals with claims, disputes, negotiations, modifications and payments. Appoints CORs and PIs.

Contacting Officers Representative (COR) - Acts as the technical representative for the CO on a contract. Ensures that all specifications and stipulations are met. Reviews the contractor's progress, advises the CO on progress, problems, costs, etc. Is responsible for review, approval, and acceptance of services.

Evaluation - A determination based on studies and other data that are available as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses exists and whether actions should be taken to remove excess animals.

Excess Wild Horses - Wild free-roaming horses which have been removed from public lands or which must be removed to preserve and maintain a thriving ecological balance and multiple-use relationship.

Genetically Viable - Fitness of a population as represented by its ability to maintain the long-term reproductive capacity of healthy, genetically diverse members.

Health Assessment - Evaluation process based on best available studies data to determine the current condition of resources in relation to potential or desired conditions.

Healthy Resources - Resources that meet potential or desired conditions or are improving toward meeting those potential or desired conditions.

Herd Area - The geographical area identified as having been used by wild horse and burro populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Herd Management Area - The geographical area as identified through the land use planning process established for the long-term management of wild horse and burro populations. The boundaries of the herd management area may not be greater than the area identified as having been used by wild horse populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Invasive Weeds - Introduced or noxious vegetative species which negatively impact the ecological balance of a geographical area and limit the areas potential to be utilized by authorized uses.

Metapopulation (complex) - A population of wild horses comprised of two or more smaller, interrelated populations that are linked by movement or distribution within a defined geographical area.

Monitoring - Inventory of habitat and population data for wild horses and associated resources and other authorized rangeland uses. The purpose of such inventories is to be used during evaluations to make determinations as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses exists and whether actions should be taken to remove excess animals.

Multiple Use Management - A combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals watershed, domestic livestock, wild horses, wildlife, and fish, along with natural, scenic, scientific, and historical values.

Project Inspector - Coordinates with the COR assigned to a contract to support his/her responsibility for review, approval, and acceptance of services.

Research - Science based inquiry, investigation or experimentation aimed at increasing knowledge about wild horses conducted by accredited universities or federal government research organizations with the active participation of BLM wild horse professionals.

Science Based Decision Making - Issuance of decisions affecting wild horses, associated resources and other authorized rangeland uses incorporating best available habitat and population data and in consultation with the public.

Studies - Science based investigation of specific aspects of wild horse and burro habitat or populations in supplement to established monitoring. These investigations would not be established following rigid experimental protocols and could include drawing blood on animals to study genetics, disease and general health issues and population dynamics such as reproduction and mortality rates and general behavior.

Thriving Natural Ecological Balance - An ecological balance requires that wild horses and other associated animals be in good health and reproducing at a rate that sustains the population, the key vegetative species are able to maintain their composition, production and reproduction, the soil resources are being protected, maintained or improved, and a sufficient amount of good quality water is available to the animals.

APPENDIX 3 Subpart A: POPULATION MODELING PARAMETERS

The population model used is Dr. Steve Jenkins Wild Horse Population Model, Version 3.2, as amended. The parameters used in the model for each HMA/Complex are as follows:

a. Each HMA/Complex will have herd specific age/sex information based on best available information and current census numbers.

b. The AML will have a range of 40 percent.

c. Foals will not be included in the count unless census is done after March 1 of each calendar year.

d. Average foaling rate is 20%. Sex ratio at birth would be 5O percent males and 50 percent females..

e. The gather cycle for the first gather will be 4 years.

f. Fertility control, if used will be a 1 year vaccine, with a 90 percent effective rate if applied from October 1 to February 28 (primary window). If the animals are primed (using just the PZP part of the vaccine), there will be a 35 percent effective rate. The priming doses would be applied from July 1 to September 30 and would expand the window of application so the effectiveness of the vaccine would similar to primary window the next time the animals were vaccinated.

g. Modeling outputs will consist of a minimum of the removal graph, and with tables displaying the age and sex of animals remaining on the HMA/Complex after the first gather and what is expected to be on the HMA/Complex prior to the next gather.

APPENDIX 3 Subpart B: ANIMAL CHARACTERISTICS AND BEHAVIOR

Wild horses in this area likely have many domestic bloodlines in their background including American Quarter Horse, Thoroughbred, Standardbred, and Arabian. Nearly every coat, color, pattern, and combinations thereof can be found within the herds. The diverse phenotypes of wild horses in this area indicate a varied genotype. Habitat conditions are such that the horses are typically in good condition throughout the year.

Wild horse bands typically include a stallion, lead mare, mares with colts, mares without colts, and subordinate males. Bachelor bands (bands of wild horses without any females) are found in this area as are single wild horses that are typically male. Within an area, bands may develop lead and subordinate roles. Subordinate bands are also known as satellite bands.

This relationship is observable by their behavior at water holes. The wild horses' competitive social structure, combined with their size and strength, allows them to compete favorably with wildlife and domestic livestock for water.

Wild horses travel up to 10 miles to water, although two to five mile distances is more common. An adult wild horse normally consumes 10 to 12 gallons of water per day, depending primarily on ambient temperature and the animal's activity. Wild horses usually have adequate water from winter snows and spring runoff that fill reservoirs and intermittent streams. During late summer and early fall wild horses depend on the few perennial sources of water (some reservoirs, streams, springs, and flowing wells) and on wells pumped for domestic livestock and wildlife. The concentration of wild horses around available water becomes a problem when water is scarce. Wild horses may become possessive of available water, resulting in direct competition with livestock and wildlife. Mountain lions may prey on wild horses.

Releases of wild horses would be near available water. Usually, wild horses gathered together would be released together. If the area is new to them, a short term adjustment period would be required while the wild horses become familiar with the new area. We anticipate no long-term adverse impacts to returned wild horses.

Released wild horses would increase inter-band encounters and confrontations. These encounters should not be detrimental over the short-term, however if horse populations exceed AMLs for an indefinite period, impacts would become consequential.

Returns could change the sex ratio within the HMAs. This should have no effect on the viability of the remaining population in the near term. Long-term effects would not be anticipated unless the

practice were repeated in future actions. For this gather the removal criteria would be to reset normal sex and age ratio possibly skewed by previous removals.

Returns would alter the average age in the HMAs slightly with some of the older animals placed in long term holding facilities. Recent winters have been comparatively mild, which may have prolonged the life of some older horses. A small-scale increase in mortality of older horses would likely occur in the next normal or severe winter. The loss of these individuals to the population would be short-term as it is unlikely that many of these animals are still reproductively active.

APPENDIX 3 Subpart C: SUMMARY OF IMMUNOCONTRACEPTIVE RESEARCH

The formulation would be delivered as an intramuscular injection by a jabstick syringe to the mares in the field. Upon impact the liquid in the chamber would be propelled into the muscle along with the pellets. This delivery method has been previously shown to work. Such a vaccine would permit a single injection to cause one or more years of contraception at approximately 90% efficiency. Only trained personnel would mix and/or administer the vaccine.

Previous wild horses immunocontraception research on wild free-roaming horse herds in Nevada has been conducted on the Antelope/Antelope Valley HMA's (1992)(Ely), on the Nevada Wild Horse Range (1996), the Kammas HMA /Antelope HA (1998)(Winnemucca), and the Antelope/Antelope Valley, Sand Springs, and Monte Cristo HMA's (1998)(Ely) utilizing PZP injections. The 1992 Antelope/Antelope Valley HMA's research found that reproductive success was 4.5% using 2 injections, 20.0% using 1 injection plus microspheres, and 28.6% using 1 injection with no microspheres. Reproductive success for mares treated with a placebo was 55.0% and untreated mares was 53.9%, which was significantly greater than treated mares. The following year, without further treatment, reproductive success was 44.0% for mares treated with 2 injections, and 54.5% for untreated mares. Data from the other groups is insufficient for comparison (Turner et al. 1997).

The Nevada Wild Horse Range field study utilized three formulations of a revised controlled release PZP vaccine, with the mares broken up into three groups. The microspheres were designed for longer delay in release and contained adjuvant. Reproductive success was 12.8% for group 1 (2 injections), 10.6% for group 2 (2 injections) and 11.3% for group 3 (1 injection). The lack of difference in fertility rates indicated that the controlled release component in the 1 injection group provided vaccine exposure equivalent to a second injection of vaccine (Turner et al. 1997).

The data for the Kamma HMA/Antelope HA (1998) has not completely been analyzed, but preliminary data shows approximately 75% effectiveness on treated mares. The data for the Antelope/Antelope Valley, Sand Springs, and Monte Cristo HMA's (1998) have not completely been analyzed to show comparative statistics.

Results of fertility control research conducted to date indicate that PZP Immunocontraception is highly effective, and that the reproductive success of the mares returns to normal the year following fertility control. There would be no significant increase in stress above that normally associated with the preparations and sorting of animals during a gather.

Wild horse populations would experience a decrease in stress due to extending the period of time between gathers. Mares would experience some stress during the administration of the fertility control drugs and would not produce progeny for one year if successful. Mares which are not supporting young would be expected to experience an increase in health and condition during their non-productive time. Animals would be exposed to potential hazards during treatment. If contraception is used genetic contributions from individual animals will be only delayed, not removed.

APPENDIX 3 Subpart D: STANDARDS FOR RANGELAND HEALTH, SOUTHEAST OREGON RESOURCE ADVISORY COUNCIL

The following section identifies the Standards for Rangeland Health, Oregon. The five standards are listed with a description of each standard.

Standard 1 - Upland soils exhibit infiltration and permeability rates that are appropriate for soil type, climate, land form, and geologic processes.

Standard 2 - Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance.

Standard 3 - Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitats potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous and able to reproduce and sustain natural fluctuations and ecological processes.

Standard 4 - Special status, threatened and endangered species and other plants and animals officially designated by the BLM and their habitats are maintained or enhanced by sustainable, healthy native plant and animal communities.

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Standard 5- The water quality of all water bodies, including ground water where applicable, located or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Oregon. Water Quality Standards for surface and ground waters include the designated requirements set forth under state law as required by section 303(c) of the Clean Water Act.